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EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 16

Application Number: 09/396,238

Filing Date: September 15, 1999

Appellant(s): Nakazawa et al.

Jules Goldberg

For Appellant

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EXAMINER'S ANSWER

This is in response to the appeal brief filed March 7, 2002.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

A substantially correct copy of appealed claim 1 appears on page 14 of the Appendix to the appellant's brief. The minor errors are as follows: In line 2 "page" should be --plate--.

(4) *Status of Amendments After Final*

No amendment after final has been filed.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

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(7) Grouping of Claims

Appellant's brief includes a statement that claims 1 - 17 stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

JP 10-204,355	Kato et al.	8/1998
US 4,718,340	Love	1/1988
EP 641 648	Adler	3/1995
JP 58-147,373	Masaaki	9/1983
US 4,555,712	Arway et al.	11/1985
US 5,363,132	Ikkatai	11/1984
US 5,322,015	Gasparrini	6/1984
US 5,988,782	Miura et al.	11/1999

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 2, and 5 - 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (JP 10-204,355) in view of Love, III (US 4,718,340). Kato et al. teach the method as recited with exception of imaging the printing plate in press. Note, for example, the English Abstract and Figures 1 - 3 of Kato et al. Love teaches the desirability of imaging a printing plate

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in press. See columns 2 and 3, the paragraph bridging columns 11 and 12, and column 21 lines 13 - 37 of Love, for example. It would have been obvious to one of ordinary skill in the art to provide the method of Kato et al. with the step of imaging the plate in press in view of Love to achieve the many benefits of directly imaging the plate in press. With respect to claim 7 it would have been obvious to one of ordinary skill in the art to provide the method of Kato et al. with a full line head as disclosed by Love to achieve faster imaging of the plate.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. in view of Love as applied to claims 1, 2, and 5 - 7 above, and further in view of Adler (EP 641 648). Neither Kato et al. or Love disclose a device for fixing the image on the plate. However, see column 8 lines 23 - 25 of Love for fixable ink compositions. It would have been obvious to one of ordinary skill in the art to provide the method of Kato et al., as modified by Love, with the step of fixing the image on the plate in view of Adler et al. so as to increase the durability of the ink deposited on the plate.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. in view of Love as applied to claims 1, 2, and 5 - 7 above, and further in view of Masaaki (JP 58-147,373). Masaaki teaches the conventionality of a means for removing dust from a recording medium before imaging. It would have been obvious to one of ordinary skill in the art to provide the method of Kato et al., as modified by Love, with the step of removing dust before imaging in view of Masaaki so as to prevent dust from interfering with the deposition of ink onto the plate.

Claims 8 - 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. in view of Love as applied to claims 1, 2, and 5 - 7 above, and further in view of Arway et al.

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(US 4,555,712). Arway et al. teach the conventionality of a means (22) for supplying ink, means (26) for recovering ink, means (40) for controlling the temperature of ink, and means (44) for controlling a concentration of ink for an ink jet print head. See Figure 1 of Arway et al., for example. Arway et al. does not teach means for stirring ink inside the ink tank but such is widely conventional in the art. It would have been obvious to one of ordinary skill in the art to provide the method of Kato et al., as modified by Love, with various means for controlling the ink inside the tank in view of Arway et al. so as to provide ink to the head in an optimum condition.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. in view of Love as applied to claims 1, 2, and 5 - 7 above, and further in view of Ikkatai (US 5,363,132). Ikkatai teaches the desirability of means for moving the head near or away from a recording medium. See columns 1 and 2 of Ikkatai, for example. It would have been obvious to one of ordinary skill in the art to provide the method of Kato et al., as modified by Love, with the step of moving the head near or away in view of Ikkatai so as to protect the head from contaminants when not imaging.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. in view of Love as applied to claims 1, 2, and 5 - 7 above, and further in view of Gasparrini (US 5,322,015). Gasparrini teaches the desirability of removing dust during printing. See the paragraph bridging columns 5 and 6 of Gasparrini, for example. It would have been obvious to one of ordinary skill in the art to provide the method of Kato et al., as modified by Love, with the step of removing dust during printing in view of Gasparrini so as to reduce contamination of the printing cylinders.

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Claims 12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. in view of Love as applied to claims 1, 2, and 5 - 7 above, and further in view of Miura et al. (US 5,988,782). Miura et al. teach the conventionality of stirring the ink within a tank and cleaning the ink jet head. See the Abstract and column 17 line 1 of Miura et al., for example. It would have been obvious to one of ordinary skill in the art to provide the method of Kato et al., as modified by Love, with a means for stirring the ink and means for cleaning the head in view of Miura et al. so as to provide a consistent ink composition to the head and remove contaminants from the head.

(11) *Response to Argument*

Appellant essentially argues that Kato et al. ('355) do not teach forming the image on the printing plate in a printing press and Love ('340) does not teach the necessary motivation to modify Kato et al. to image the printing plate in a printing press.

Love shows in each of Figures 1, 2, 4, 7, and 8 imaging a printing plate in a printing press. Note the imaging heads (30, 60, 70) located adjacent the plate cylinder (10) having a printing plate mounted thereto which then prints the image either directly on the paper (8) or offsets it to a blanket cylinder (6) which prints the image on the paper (8a). (In this instance, the printing press includes the plate cylinder (10) for holding the printing plate and the dampening (40) and inking (50) systems for carrying out the lithographic process of feeding dampening water and ink to the printing plate. The advantages of imaging the printing plate in the printing press are numerous and conventional in the art. Appellant even acknowledges the conventionality of

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prior art imaging in press on page 4 lines 3 - 8 in the Brief (as previously stated by appellant on page 2 of the specification).

For example, Love teaches that the controller could readily carry out imaging of the printing plate and then run the printing process with the imaged plate on a single apparatus in an operating mode called "image and run". See column 19 line 48 through column 20 line 20 of Love, for example. One advantages of this is to utilize only one apparatus to image the plate and print with that plate. Thus, one would save the cost of a separate imaging device to feed and support the printing plate during imaging. Note Kato et al. disclose a separate imaging printer (1) in Figure 1 for performing the imaging operation. This plate would then need to be mounted to a plate cylinder in a printing press. However, Love does not need a separate printer and conveniently utilizes the plate cylinder of the printing press to feed and support the printing plate as it passes the ink jet head as it is being imaged. Another advantage of this is to more quickly print with the imaged printing plate, i.e. "image and run", and also eliminate any handling of the imaged printing plate. Thus, one would save time in not having to transfer the printing plate from the imaging printer to the printing press and also possibly avoid personal injury or marring of the printing plate. Printing plate substrates are normally made of aluminum with sharp corners that are known to cut handlers of those plates. Also, fingerprints on the printing plate are a constant problem in the art as they are oily (which is highly receptive to the oil based ink used in the printing process) and would thus transfer from the printing plate to the printing paper.

Love teaches further advantages in items (1) - (11) in columns 2 - 3. Note item (5) which addresses avoiding registration errors. When a printing plate is mounted after imaging there is

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the possibility it could be mounted crooked. Accordingly, the image would be printed crooked on the paper substrate resulting in either an inferior printed product or wasted paper if it is thrown away. This is even more drastic in multicolor printing. (Although Love does not specifically teach multicolor printing since only one press is illustrated it is apparent that the paper could be directly fed to another printing press to receive a multicolor image.) If a subsequent printing plate is misaligned with a previous printing plate a multicolor composite image will be out of register. However, a computer controller can easily synchronize the digital image signals sent to the respective ink jet heads with the rotation of the plate cylinders during imaging when the plates are already mounted on the plate cylinders. No crooked image will result and multicolor images will be in perfect register.

In summary, imaging printing plates in the printing press is known to one of ordinary skill in the printing art and highly desirable for many reasons such as the few addressed above. Furthermore, appellant is aware of such prior art, as evidenced by page 4 lines 3 - 8 in the Brief and page 2 in the specification. The motivation to image the particular printing plate with the particular ink jet head disclosed by Kato et al. within a printing press is abundantly clear to one of ordinary skill in the art in view of Love.

Appellant's remaining arguments will now be addressed.

On pages 7 - 8 appellant first states that Kato et al. only teaches an ink composition in the Abstract but later acknowledges that the ink jet head makes a lithographic printing plate on page 8. The translation, in particular paragraphs [63] - [74] confirm this. It is noted that appellant has two common inventors with the Kato et al. reference so appellant's reliance on the Abstract is not

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particularly convincing. Appellant is silent with respect to the fact that the ink jet head of Kato et al. is also an electrostatic ink jet head. However, Kato et al. refer to the "electric field control" and "spray electrode" in paragraphs [63] and [70]. Note also that appellant's Figures 3 and 4 illustrating the structure of the ink jet head is the same as Figures 2 and 3 of Kato et al. Although appellant states that Kato et al. says nothing about the claimed invention, the admission in the long paragraph on page 8 contradicts this.

Appellant states in the second paragraph on page 9 of the Brief that ink jet printing does not use dampening water or a blanket. This is not refuted. This paragraph appears to deliberately mix the *imaging* printing process performed with the ink jet head with the *lithographic* printing process performed with the imaged printing plate mounted in a printing press. It is not clear what appellant is trying to state here. However, a brief explanation will be given in an attempt to clarify this. The ink jet head is used to provide an oil based ink on the printing plate precursor (precursor simply means the printing plate before imaging). This imaged printing plate is then used to print by lithography, which is based on the principle that oil and water do not mix. The background of the printing plate is hydrophilic (water receptive) and the image is hydrophobic (literally water repellant, but in effect oil receptive). The plate first receives water from the dampening system which naturally adheres to the hydrophilic background then receives ink from the inking system which is naturally repelled by the water on the hydrophilic background and naturally adheres to the hydrophobic image. This is then transferred to the printing paper. Clearly the ink jet head does not use dampening water in either Kato et al. or Love.

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The paragraph bridging pages 9 and 10 address what appears to be the heart of the invention; imaging the printing plate in press. This has been addressed above.

The first two full paragraphs on page 9 state that Love does not teach an ink jet head. However, the paragraph bridging pages 10 and 11 then acknowledge that Love does teach an ink jet head. Appellant then states that the ink jet head of Love does not eject "ink" but rather a hydrophobic fluid. This argument has no merit since appellant's "ink" is a hydrophobic fluid. Possibly appellant is attempting to state that somehow the two fluids are different. In fact, both fluids are specifically formulated to be hydrophobic, durable, and ejectable from an ink jet head. There is no difference whether it is called an "ink" or a "hydrophobic" material.

In the first full paragraph on page 11 appellant states that the image of Love is directly formed on the cylinder. This is one embodiment of Love, but appellant has been previously pointed to teachings of Love which state that the image may be formed on a separate printing plate mounted on the plate cylinder (10). See column 4 lines 37 - 45, column 5 lines 7 - 11, column 13 lines 11 - 13, and column 15 lines 12 - 20 of Love, for example. Appellant then states that Love relates to a stencil printing press. Again, this is one embodiment of Love. However, Love teaches lithographic printing (note the terminology "hydrophilic" and "hydrophobic") in the Abstract, repeatedly throughout the specification, and shows lithographic presses in the drawings.

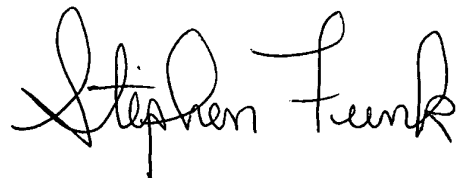
Appellant then states in the last paragraph on page 11 that lasers are expensive. Again, this is one embodiment of Love, but appellant has been previously pointed to teachings of Love which state that the imaging head may be an ink jet head. See column 21 lines 20 - 24 of Love, for example.

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Lastly, appellant argues on page 12 that there is no motivation to modify Kato et al. in view of the teachings of Love. This has been addressed above.

For the above reasons, it is believed that the rejections should be sustained.

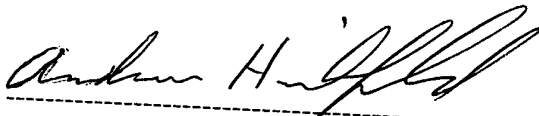
Respectfully submitted,



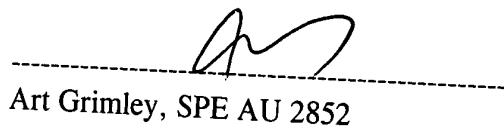
STEPHEN R. FUNK
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December 6, 2001

Conferees



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